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NAB LITTLE CREEK
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PROPOSED PLAN FOR SOLID WASTE MANAGEMENT UNIT 7B SMALL BOATS SANDBLAST YARD JEB LITTLE CREEK VA

7/1/2013

NAVFAC MID ATLANTIC

Proposed Plan

Solid Waste Management Unit 7b – Small Boats Sandblast Yard

Joint Expeditionary Base Little Creek-Fort Story
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

July 2013

1 Introduction

This **Proposed Plan** is being submitted for public review and comment and presents information that supports the conclusion that **no further action** is necessary to address **sediment** and **surface water** at **Solid Waste Management Unit (SWMU)** 7b, Small Boats Sandblast Yard (Desert Cove), at Joint Expeditionary Base (JEB) Little Creek, Virginia Beach, Virginia, herein referred to as SWMU 7b. A removal action was completed at the site. There are no **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**-related unacceptable risks to human health or the environment based on current **site** conditions. Therefore, this plan proposes no further remedial action.

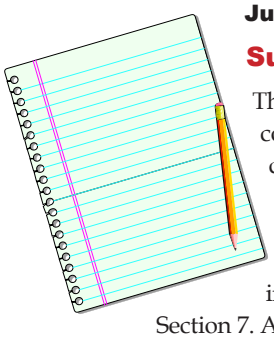
This Proposed Plan is issued jointly by the United States Navy (Navy), the lead agency for environmental restoration activities at JEB Little Creek-Fort Story, and the **United States Environmental Protection Agency (USEPA)** Region III, the lead regulatory agency. The Navy and the USEPA, in consultation with the **Virginia Department of Environmental Quality (VDEQ)** the support agency, will select the final remedy for this site after reviewing and considering all information submitted during the 45-day **public comment period**. The Navy and USEPA, in consultation with the VDEQ, may modify this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on this Proposed Plan.

The Navy is issuing this Proposed Plan as part of its public participation responsibilities under Sections 113 (k)(2)(B), 117(a), 120(f), and 121 (f)(1)(G) of the CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), commonly known as Superfund, and Sections 300.430(f)(2) and 300.430(f)(3) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. This Proposed Plan summarizes information that can be found in greater detail in the reports of investigations that have been conducted at SWMU 7b, including the **Remedial Investigation (RI)/ Human Health Risk Assessment (HHRA)/Ecological Risk Assessment (ERA)** (CH2M HILL, 2004), the Post Military Construction Action Evaluation (CH2M HILL, 2012), and the **Engineering Evaluation/ Cost Analysis (EE/CA)** (CH2M HILL, 2013), as well as other reports listed in Table 1. These reports are contained in the

Please Mark Your Calendar for the Public Comment Period

Public Comment Period

July 27 – September 12, 2013



Submit Written Comments

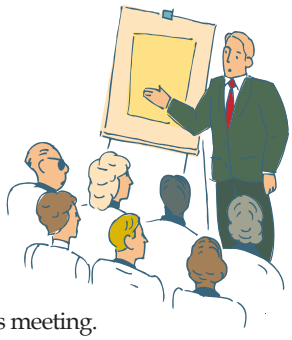
The Navy will accept written comments on this Proposed Plan during the public comment period. To submit comments or obtain further information, please refer to the names and contact information included at the end of Section 7. A blank sheet has been added at the end of the document to be used for writing comments.

Attend the Public Meeting

August 13, 2013
7:00 — 7:30 pm

Virginia Beach Central Library
Libris Conference Room
4100 Virginia Beach Boulevard
Virginia Beach, Virginia 23452

The Navy will hold a public meeting to explain the Proposed Plan. Verbal and written comments will be accepted at this meeting.



Location of Administrative Record File:

https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_ww_pp/navfac_hq_pp/navfac_env_pp/env_restoration_installations/lant/midlant/jeblcfs

NAVFAC Atlantic
6506 Hampton Boulevard, Norfolk, VA 23508
Phone: 757.322.4785

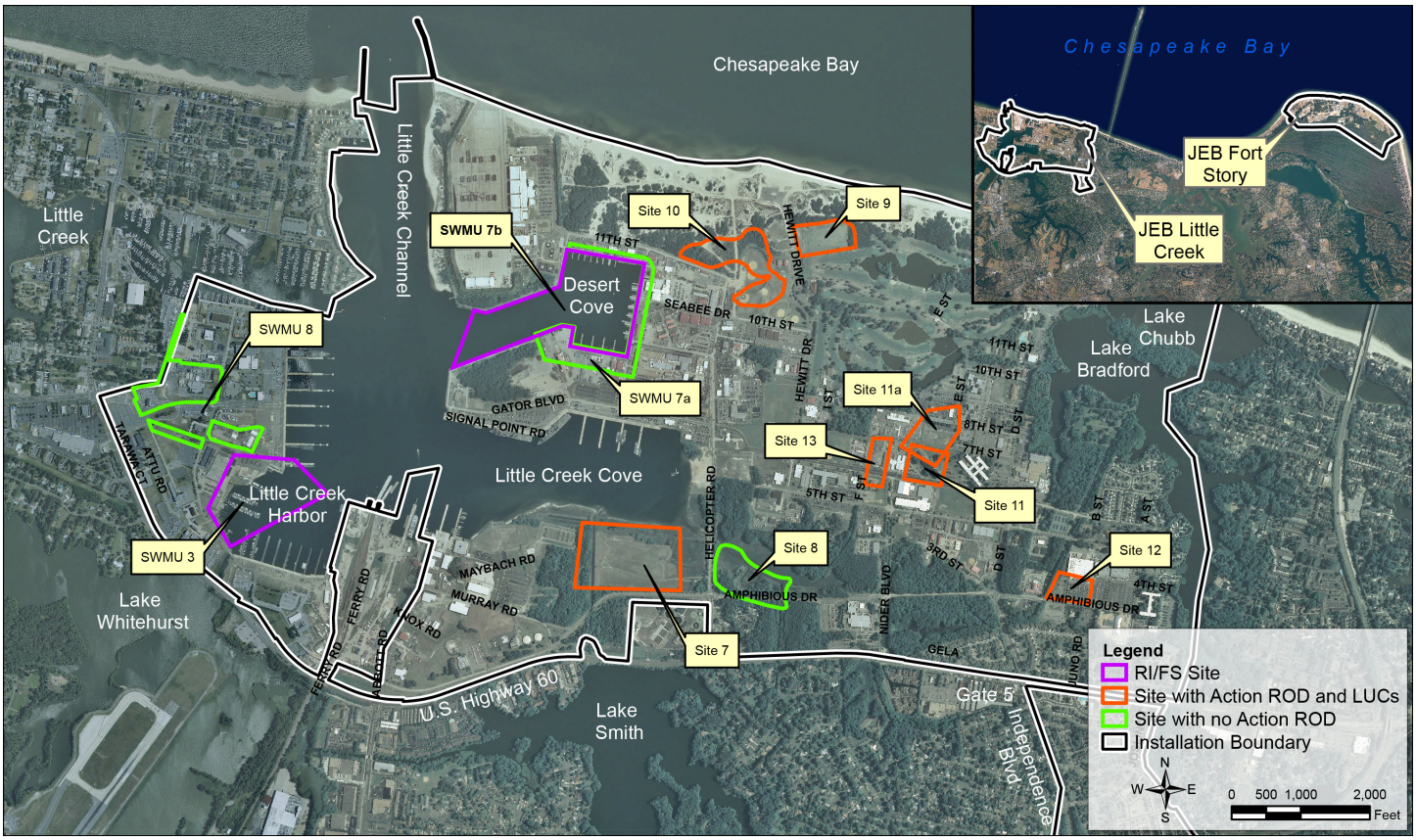


Figure 1 – SWMU 7b Location Map

Administrative Record (AR) file for JEB Little Creek-Fort Story. A glossary of key terms, which are identified in bold print the first time they appear, is provided at the end of this Proposed Plan.

2 Site Background

On October 1, 2009, Hampton Roads' first Department of Defense Joint Base was established. This new installation comprises the former Naval Amphibious Base (NAB) Little Creek and the former Army post Fort Story; the new name for the combined installation is JEB Little Creek-Fort Story. With the formation of this new command, the Navy assumes responsibility for management of both properties and will now merge public meetings regarding the ongoing **Environmental Restoration Programs (ERPs)**. However, separate records will be maintained to ensure the integrity of ongoing efforts at both properties. When required for public notices and distributions, the former bases are identified as JEB Little Creek-Fort Story. For ERP documents, the bases will be referred to separately as JEB Little Creek or JEB Fort Story. This Proposed Plan contains information associated with the ERP at JEB Little Creek.

The former NAB Little Creek was commissioned in 1945 to train landing craft personnel for operational assignments. During the last 60 years, the facility has expanded in both the area and complexity of its mission.

JEB Little Creek consists of 2,215 acres located in the northwest corner of Virginia Beach, Virginia, adjacent to the Chesapeake Bay (Figure 1). The western boundary of JEB Little Creek borders the City of Norfolk, Virginia. JEB Little Creek is primarily an industrial facility that provides logistics and support services to 18 home-ported ships and 155 shore-based resident commands. The area surrounding the facility is low-lying and relatively flat. JEB Little Creek is bounded on the north by the Chesapeake Bay, on the west by residential communities and several marinas, on the south by Shore Drive, Lake Whitehurst, Little Creek Reservoir/Lake Smith, Norfolk International Airport, and residential development, and on the east by Lake Bradford.

2.1 Site Description and Background

SWMU 7, Small Boats Sandblast Yard, is located at the intersection of Intercove Road and Signal Point Road in the north-central portion of JEB Little Creek (Figure 2). As a result of previous investigations conducted at the site, the Navy, in partnership with USEPA and VDEQ, agreed to separate the terrestrial and aquatic portions of SWMU 7 into SWMUs 7a and 7b, respectively. SWMU 7a addresses **groundwater** and **soil**, and SWMU 7b addresses Desert Cove surface water and sediment (Figure 2). Following an Interim Removal Action in September 2004 to address lead-contaminated soil, the Navy, in partnership with the USEPA and the VDEQ, agreed that no further action was required for SWMU 7a, and a **Record of Decision (ROD)** was signed in June 2005 (Navy, 2005). This Proposed Plan is prepared for SWMU 7b, the aquatic portion of SWMU 7.

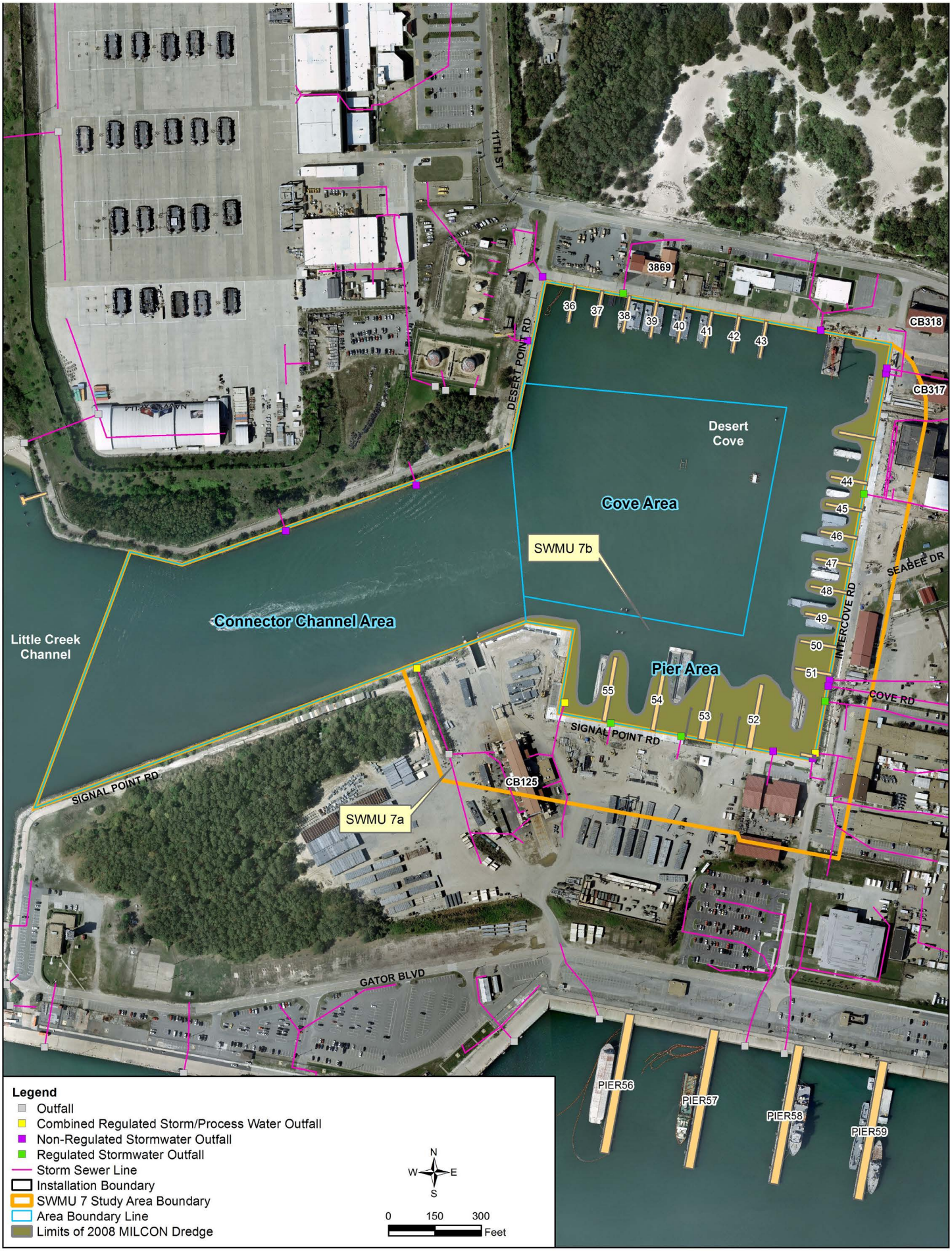


Figure 2 – SWMU 7b Boundary and Immediate Vicinity

SWMU 7a and SWMU 7b were used to sandblast and paint ships until 1996, when sandblasting activities were moved to an indoor sandblasting facility in building CB-125. Approximately 4,000 cubic yards (yd^3) of spent **abrasive blast material (ABM)** generated between 1960 and 1982 were stored in open piles in the construction footprint of building CB-125 and in the area of buildings CB-317 and CB-318 while awaiting toxicity characterization prior to disposal. Results of toxicity characterization indicated the sandblast residue was not hazardous. No release controls were identified at SWMU 7; therefore, spent ABM was historically released to the surrounding soil and Desert Cove.

2.2 Summary of Investigations and Actions

Environmental investigation efforts were initiated at JEB Little Creek (former NAB Little Creek) under the Navy Assessment and Control of Installation Pollutants Program in 1984. SWMU 7a and SWMU 7b have been characterized under several investigations and studies between 1989 and 2012. Table 1 summarizes investigations and studies specific to SWMU 7b.

Detailed information from previous investigations conducted at SWMU 7b is available in the AR file for JEB Little Creek. A complete list of the documents included in the AR file can be obtained from the JEB Little Creek Environmental Restoration web site (https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_ww_pp/navfac_hq_pp/navfac_env_pp/env_restoration_installations/lant/midlant/jeblcfs) or by contacting the **Naval Facilities Engineering Command (NAVFAC)** Atlantic Public Affairs Office at (757) 341-1410.

3 Site Characteristics

The SWMU 7b characteristics are depicted on Figure 3 as a **conceptual site model**. SWMU 7b consists of Desert Cove and the Connector Channel, which connects the site to Little Creek Channel and ultimately the Chesapeake Bay. SWMU 7b is a tidal marine environment that receives stormwater runoff or process water discharge through one of the 22 outfalls (11 non-regulated stormwater, eight

Table 1 - Studies, Investigations, and Acivities Summary

Study/Investigation/ Activity*	AR Document Number	Investigation Activities
Final Site Investigation (SI), SWMU 7 and SWMU 8 (CH2M HILL, 2001)	000543	Sediment samples were collected and analyzed for metals, **polycyclic aromatic hydrocarbons (PAHs)**, grain size, pH, and total organic carbon to verify the presence or absence of contamination and to conduct a human health risk screening. Metals and PAHs were detected in sediment above human health screening criteria and identified as **contaminants of potential concern (COPCs)**. Additionally, abrasive blast material (ABM) was observed in sediment. The SI recommended a Screening Ecological Risk Assessment (ERA) to identify potentially complete exposure pathways for **ecological receptors** and an RI to define the nature and extent of contamination. The technical memorandum *Preliminary Delineation of Abrasive Blast Material, SMWU 8-West Annex Sandblast Area* is included as part of the SI. The memorandum documents the results of blast grit (ABM) samples collected for disposal characterization. The ABM was found to be non-hazardous.
Draft Screening and Baseline ERA for SWMUs 7 and 8 (CH2M HILL, 2001)	001031	A Screening ERA and Baseline ERA, constituting Steps 1 through 3 of the ERA process, were completed using data collected as part of the SI. Metals and PAHs in sediment exceeded ecological screening values. The Baseline ERA concluded that potentially unacceptable risks to **lower-trophic-level aquatic receptors** were identified associated with exposure to select metals and PAHs in sediment; however, potential risks to **upper-trophic-level aquatic receptors** were negligible.
Final Remedial Investigation, Human Health Risk Assessment, and Ecological Risk Assessment (RI, HHRA, and ERA) for SWMU 7 – Small Boats Sandblasting Yard (CH2M HILL, 2004)	000653	During the RI/HHRA/ERA, SWMU 7b was divided into three areas – the Connector Channel, Cove, and Pier Area – to better evaluate potential risks where exposures could vary because of differences in the magnitude of contaminant levels (Figure 2). Sediment samples were collected in each area and analyzed for metals, PAHs, ammmonia, grain size, pH, and total organic carbon to define the nature and extent of contamination and to evaluate potential human health and ecological risks. Because of the tidal nature of the water body and numerous stormwater outfall drainage locations, surface water samples were not collected, as it could not be determined if any detected contaminants were from SWMU 7 or non-site-related sources. Some ABM was observed in sediment throughout the Connector Channel and Cove Areas, with greater ABM concentrations noted in the Pier Area adjacent to Pier 53. Metals and PAHs were detected above human health and ecological screening levels in all three areas; however, the quantitative HHRA identified no unacceptable human health risks from exposure to sediment. The ERA (through Step 3A) identified potentially unacceptable ecological risks to lower-trophic-level receptors exposed to metals (arsenic, copper, lead, mercury, selenium, silver, tin, and zinc) and PAHs in sediment. In general, COPC concentrations were highest in the Pier Area and lowest in the Connector Channel. The RI recommended that further investigation of SWMU 7b sediment be conducted following completion of the scheduled Military Construction action.

Table 1 - Studies, Investigations, and Acivities Summary

Study/Investigation/ Activity*	AR Document Number	Investigation Activities
Final Technical Memorandum Post-Military Construction Action Evaluation, SWMU 7b – Small Boats Sandblast Yard (Desert Cove) (CH2M HILL, 2012)	001618	In November 2009, surface sediment sampling was conducted to evaluate post-Military Construction action conditions within the Cove, Connector Channel, and Pier Areas. The Navy, in partnership with USEPA and VDEQ, agreed that PAHs are not typically associated with sandblasting residues and are likely to be primarily attributable to the 19 stormwater outlets that convey stormwater runoff from various locations within the facility, including numerous parking areas; therefore, further investigation of PAHs in sediment under CERCLA was not warranted. Additionally, based upon low potential risks, contaminant distributions, and urban **background** conditions, the Navy, in partnership with USEPA and VDEQ, agreed that risks associated with arsenic, selenium, and silver were not unacceptable and further investigation of these constituents in sediment was not warranted. As part of post-Military Construction investigation activities, surface sediment samples were collected for analysis of copper, lead, mercury, tin, and zinc. In general, post-Military Construction action COPC concentrations in the Connector Channel and Desert Cove Areas were similar to pre-action conditions. Concentrations of COPCs detected within the dredged portion of the Pier Area were generally similar to, or lower than, those previously detected, with the exception of the northeastern corner of the Pier Area. In August and September 2010, additional sediment sampling was conducted in the Cove, Connector Channel, and Pier Areas to evaluate the condition of the **benthic invertebrate** community at SWMU 7b and assess the correlation between the benthic community and metals and ABM content in sediment. The data suggest that some impacts to the benthic community are occurring in portions of the Pier Area; however, the portion of the Pier Area with the highest metals concentrations and ABM (northeast corner) did not consistently show the most impact to the benthic invertebrate community, suggesting other factors not related to historic sandblasting activities, such as dissolved oxygen, may have more impact on the survival of the benthic invertebrate community. The evaluation concluded that ecological risks in the Connector Channel and Cove Area are not unacceptable, and no further action is warranted for these areas for the protection of the environment. Potentially unacceptable risks to ecological receptors were identified in the Pier Area, particularly the northeast corner. Although physical characteristics of the site, which are not related to historic sandblasting activities, may be having more of an impact on the condition of the benthic invertebrate community than the ABM and metals detected in site sediment, the magnitude of these metals concentrations may result in unacceptable risks to ecological receptors should these physical characteristics change over time; therefore, site remediation at SWMU 7b is warranted. It was recommended that the **remedial action objectives** established for the site focus on the reduction of metals concentrations and not the establishment of a comparable (to an urban reference condition) benthic invertebrate community.
SWMU 7b Engineering Evaluation/Cost Analysis (EE/CA) (CH2M HILL, 2013a) and Action Memorandum (AM) (CH2M HILL, 2013b)	001697 (EE/CA) 001706 (AM)	In January 2013, an EE/CA was prepared to evaluate **non time-critical removal action (NTCRA)** alternatives to mitigate potential unacceptable ecological risks in sediment. As previously documented in the post-Military Construction evaluation and further documented in the EE/CA, as a result of risk management considerations, no action is warranted for arsenic, selenium, silver, or PAHs in sediment. Additionally, based upon urban background conditions and an evaluation of tributyl tin results, the Navy, in partnership with USEPA and VDEQ, agreed that risks associated with tin are not unacceptable and no action was warranted for this constituent in sediment. During development of clean-up goals for SWMU 3, a former sandblasting area with similar sediment **contaminants of concern (COCs)**, regression equations were developed based upon the correlation between ABM content and COC concentrations which were used to calculate associated sediment concentrations using 1 percent ABM (the lowest possible integer). The resulting values generally fell between the **probable effects level (PEL)** and National Oceanic and Atmospheric Administration (NOAA) **effects range medium (ER-M)**. No correlation between ABM and metals COC concentrations at SWMU 7b was established. However, based upon the similarity of SWMU 3 and SWMU 7b, and the urban nature of Desert Cove, preliminary remediation goals (PRGs) were established as the NOAA ER-M screening values (Table 2). Because ABM was classified as non-hazardous and any contribution to potential risk to the environment is captured as part of sediment analytical results, the Navy, in partnership with USEPA and VDEQ, agreed that the presence of ABM in sediment does not drive the need for action at SWMU 7b. To define the area requiring **remedial action** under CERCLA, the site was broken down into 100-by-100-foot grid cells. Using all available surface sediment data, remediation quotients (RQs) were calculated as the ratio of the sediment concentration to the site-specific cleanup goal. A grid cell was defined as requiring action and included in the proposed removal action area if the RQ for one or more individual COCs exceeded 1.5 and the

Table 1 - Studies, Investigations, and Acivities Summary

Study/Investigation/ Activity*	AR Document Number	Investigation Activities
SWMU 7b Engineering Evaluation/Cost Analysis (EE/CA) (CH2M HILL, 2013a) and Action Memorandum (AM) (CH2M HILL, 2013b)	001697 (EE/CA) 001706 (AM)	average RQ for the four COCs exceeded 1 (Figure 4). This approach was selected giving consideration to the size of the grid cells, the spatial distribution of the surface sediment data, and the recognition of the cumulative impacts caused by multiple contaminants. The use of a threshold value of 1.5 for an individual contaminant is deemed appropriate based on the potential impacts of each contaminant at these levels and the spatial distribution of the contaminants. The threshold value of 1 for the mean of the four COCs acknowledges the distribution of all of the contaminants across the grid cell and cumulative impacts posed by multiple contaminants, particularly those exceeding ecological threshold values. Based upon existing data or grid cell location within the Military Construction dredge limits, three grid cells were proposed for elimination from the area requiring action. The alternative selected included mechanical dredging of impacted sediment, upland disposal of dredge spoils, and replacement with clean fill. A public notice was issued in The Virginian Pilot on December 13, 2012, and the EE/CA was made available to the public from December 13, 2012, to January 13, 2013. No comments were received and an AM was signed by the Navy on January 29, 2013.
NTCRA Summary	Pending	In December 2012, prior to implementation of the NTCRA, removal area delineation sampling was conducted to determine the final removal area for mitigation of ecological risk in sediment. Sediment samples were collected from within the proposed removal area grid cells as identified in the EE/CA. Surface sediment samples were collected in those grid cells recommended for elimination from the proposed removal action area to confirm COC concentrations were below cleanup criteria. In the remaining grid cells, subsurface sediment samples were collected in 1-foot intervals to determine the depth where COC concentrations were below cleanup criteria. All samples were analyzed for the site COCs (copper, lead, mercury, and zinc), and RQs were calculated to delineate the lateral and vertical extent of removal required to mitigate ecological risk in sediment. Figure 5 presents the pre-confirmation sample locations, RQ calculations, and final removal action area. Surface sediment COC concentrations in those grid cells recommended for removal met cleanup criteria; therefore, these grid cells were removed from the area requiring action. Within the remaining grid cells, the vertical depth of removal required was defined as the depth where sediment COCs concentrations met cleanup criteria. Beginning in April 2013 4,040 yd^3 of sediment were dredged from the removal action area in Desert Cove. Dredged material was transported via barge to Port Weanack where it was solidified and offloaded for transport and disposal in an upland facility. As a result of engineering constraints, sediment within 5 feet of the bulkhead was left in place. Following dredging activities, the site was restored through placement of a clean sand layer. Within 50 feet of the bulkhead, dredged areas received approximately 1 foot of sand to return the area to bulkhead design grade; the remaining portion of the site, including the area adjacent to the bulkhead that was not dredged, received approximately 6 inches of sand. A construction summary memorandum will be prepared prior to signature of the Record of Decision (ROD) to document completion of removal activities and mitigation of ecological risks associated with SWMU 7b sediment.

Notes: *The documents listed are available in the AR and provide detailed information used to support remedy selection at SWMU 7b.

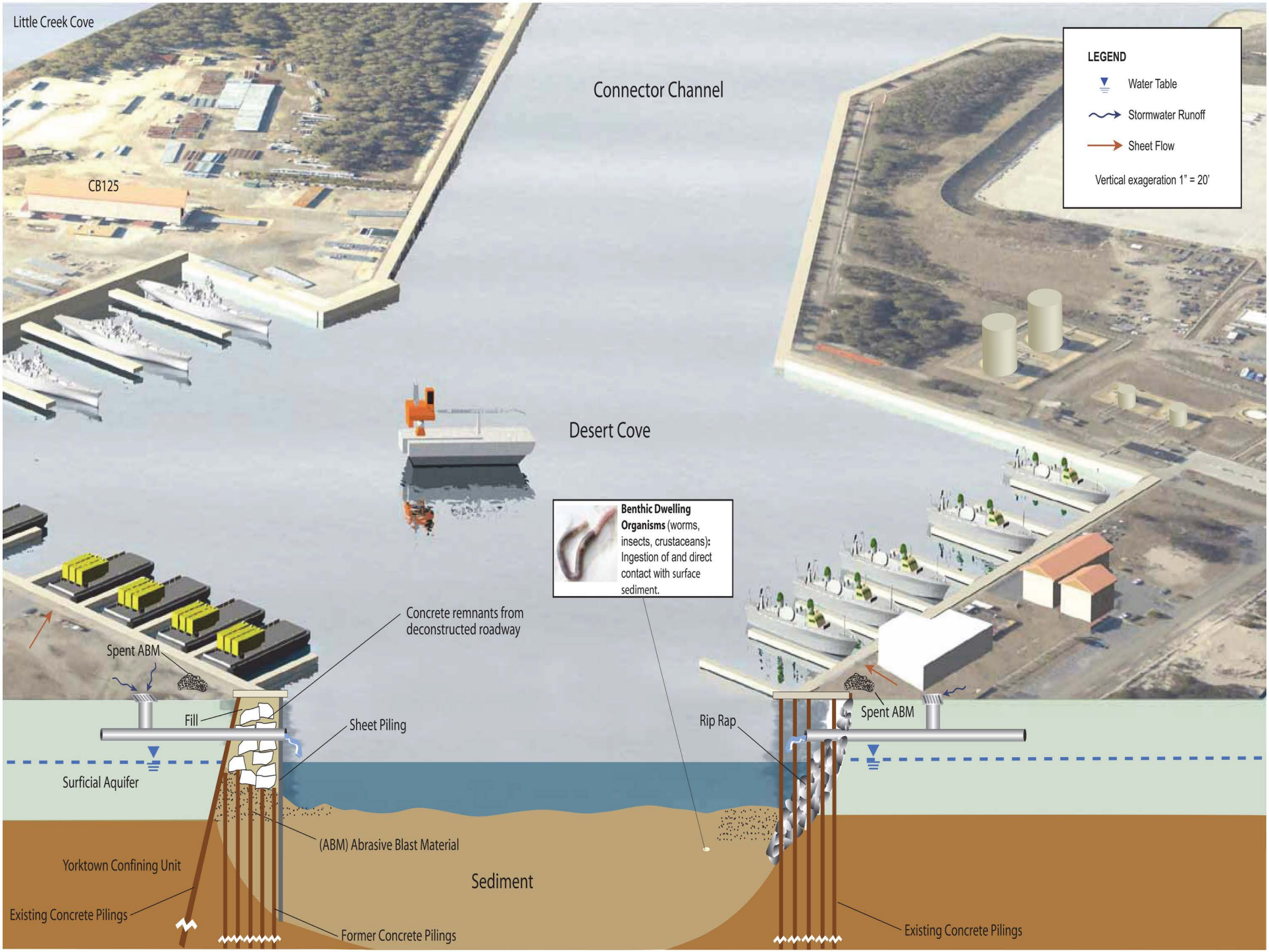
regulated stormwater, and three regulated process water) surrounding Desert Cove. All drainage to the cove is from on-Base areas, consisting mainly of stormwater from buildings and asphalt parking areas. SWMU 7b sediment generally consists of fine silty sand material. Due to the configuration of the entrance channel to the Desert Cove relative to Little Creek Channel, the sediment deposition rate within the cove is low.

The entire shoreline of SWMU 7b consists of bulkhead and rip-rap. In 2008, a Military Construction action was completed which demolished and replaced Piers 44 through 51, constructed a new quaywall along the eastern and southern edges of the cove, and dredged limited areas surrounding the former piers. Prior to the Military Construction action, the area was last dredged in 1953.

Table 2 – Sediment Cleanup Goals

COC	Cleanup Goal (milligrams per kilogram)
Copper	270
Lead	218
Mercury	0.71
Zinc	410

Figure 3 – SWMU 7b Conceptual Site Model



Note: Conceptual site model representative of pre-NTCRA site conditions

4 Scope and Role of Response Action

The former NAB Little Creek, now referred to as JEB Little Creek, was placed on the **National Priorities List (NPL)** in May 1999. SWMU 7b is one of 12 ERP sites being addressed under CERCLA at JEB Little Creek (Figure 1). In addition to SWMU 7b, SWMU 3 – Pier 10 Sandblast Yard, is currently active in the ERP. SWMU 3 is currently being addressed under removal action authority.

The following sites have a Final ROD in place:

- SWMU 7a: No Action ROD
- SWMU 8: No Action ROD
- Site 7: Action ROD for maintenance of the existing soil cover, **land use controls (LUCs)**, and groundwater monitoring
- Site 8: No Action ROD
- Sites 9 and 10: Action ROD for LUCs and groundwater monitoring
- Site 11: Action ROD for **enhanced reductive dechlorination (ERD)** with LUCs and post-treatment groundwater monitoring
- Site 11a: Action ROD for ERD with LUCs and post-treatment groundwater monitoring
- Site 12: Action ROD for **bio-augmentation** with LUCs and post-treatment groundwater monitoring
- Site 13: Action ROD for **enhanced anaerobic bioremediation** with LUCs and post-treatment groundwater monitoring

Seventeen sites were identified in the Federal Facility Agreement as requiring further evaluation through desktop audits or site screening process investigations. Sixteen of the sites were evaluated and closeout documentation was prepared (Table 3). Site 11a was recommended for further investigation, and a ROD was signed in September 2011.

The Federal Facility Agreement also identified 105 sites for which no action under CERCLA is required due to the determination that the site poses no threat, or potential threat, to public health, welfare, or the environment or the site is addressed by other environmental programs.

Seven Military Munitions Response Program sites were identified for Preliminary Assessment. Of the seven sites, two were determined to require no action under CERCLA following completion of the Preliminary Assessment (Table 3). The five remaining sites were identified for further evaluation through desktop audits or site screening process investigations. Each site was evaluated and closeout documentation was prepared (Table 3). Details of these investigations are presented in the **Site Management Plan (SMP)** for JEB Little Creek, which is updated annually and available in the AR file.

There are no principal threats at SWMU 7b. Non-principal threats were addressed during removal of contaminated sediment and no further action is the Preferred Alternative. No further action is recommended as the final decision for SWMU 7b. This recommendation does not directly include or affect any other sites at JEB Little Creek.

5 Summary of Site Risks

Detailed results of the Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) conducted at SWMU 7b are presented in the RI/HHRA/ERA Report (CH2M HILL, 2004) and Post-Military Construction Action Evaluation (CH2M HILL, 2012) available in the AR file. Because of the tidal nature of the water body and the presence of 22 outfalls (19 stormwater and three process water) surrounding the Cove, the source of any contamination detected in the surface water of Desert Cove or the Connector Channel may or may not be associated with historical sandblasting activities at SWMU 7; therefore, surface water was not evaluated in the HHRA or ERA.

No human health risks associated with exposure to sediment were identified. Potential ecological risks associated with lower-trophic-level receptor exposure to site COCs (copper, lead, mercury, and zinc) in sediment have been mitigated as a result of the 2013 non time-critical removal action (NTCRA). Pre-removal action confirmation sediment samples were collected prior to completion of the NTCRA to define the extent of removal required to mitigate all potential ecological risk associated with sediment. Site-specific cleanup goals were established as the NOAA ER-M screening values (Table 2). Because ABM was classified as non-hazardous and any contribution to potential risk to the environment is captured as part of sediment analytical results, the Navy, in partnership with USEPA and VDEQ, agreed that the presence of ABM in sediment does not drive the need for action at SWMU 7b. Therefore no clean-up goal for ABM was established. A more detailed discussion of site-specific cleanup goals is provided in Table 1.

Prior to conducting the removal action, pre-removal action sediment sampling was conducted to define the final lateral and vertical extents of removal required to mitigate potentially unacceptable ecological risks at SWMU 7b. Sediment data was compared to site-specific cleanup goals and the removal action area was defined as described in Table 1 and presented on Figures 4 and 5. Prior to and immediately following dredging, bathymetric surveys were conducted to confirm that required dredge depths were achieved. Following successful completion of dredging, a minimum of 6 inches of clean sand was

Table 3 – Site and Preliminary Screening Area Closeout Summary

Site/Preliminary Screening Area	Investigation Activity	Determination	Closeout Documentation
Federal Facility Agreement Sites			
SWMU 30 – Leaking Above Ground Diesel Tank	Desktop audit and site visit.	Aboveground storage tank (AST) and surrounding berm is in good condition. Further assessment will be conducted under Spill Prevention, Control, and Countermeasures Plan/AST Program.	Final June 2003 Tier I Partnering Team Meeting Minutes, Consensus Statement.
SWMU 96 – Scrap Metal Storage Area	Desktop audit and site visit.	Currently an active equipment storage area operated under facility protocols for maintaining best management practices. No evidence of a CERCLA release. No further action required.	Final Closeout Report Appendix B Sites SWMUs 96, 97, 98, and 119, NAB Little Creek, Virginia Beach, Virginia. September 2004.
SWMU 97 – Vehicle Maintenance Facility Storm Drain		Active storm drain operated under the facility Virginia Pollutant Discharge Elimination System permit. No evidence of a CERCLA release. No further action required.	
SWMU 98 – Elevated Causeways Mechanic Shop Material Dispensing Area		No evidence of a CERCLA release. No further action required.	
SWMU 119 – Former Special Warfare Group 2 Electronics Shop	Groundwater samples collected.	No evidence of a CERCLA release or potential unacceptable risks. No further action is required.	
Area of Concern (AOC) H – Buildings 3109 and 3360 at Golf Course (Pesticide Mixing Area)	Soil samples collected.	Potential risks to human health and ecological receptors minimal and no further action is required.	Final Close-Out Report Appendix B Sites AOCs – H, I, J, and Site 14, NAB Little Creek, Virginia Beach, Virginia. March 2004
AOC I – Eagle Haven Golf Course Pond	Soil and sediment samples collected.		
AOC J – Former "Burn Area" between IF Sites 9 and 10	Soil and groundwater samples collected.		
Installation Restoration Site 14 – Old Pole Yard and Transformer Storage Area	Soil samples collected.		
SWMU 18 – Personal Watercraft Transmission Garage Spent Battery Shop, Collection Area	Desktop audit and site visit.	No evidence of a CERCLA release. No further action required.	Final April 2005 Tier I Partnering Team Meeting Minutes, Consensus Statement.
SWMU 116 – Morale, Welfare, and Recreation Boat Maintenance Facility			
AOC D – **Polychlorinated Biphenyl (PCB)** Transformer Leak			
SWMU 5 – Port Ops Boat Painting Area	Soil and groundwater samples collected.	No evidence of a CERCLA release or potential unacceptable risks. No further action is required.	Final Site Screening Assessment Closeout Report SWMUs 5, 6, 13, and Site 6, NAB Little Creek, Virginia Beach, Virginia. January 2006.
SWMU 6 – Seabee Area – CB-124	Soil and groundwater samples collected.		
SWMU 13 – Former Pesticide Shop	Soil and groundwater samples collected.		
Installation Restoration Site 6 – Special Boat Unit Battery Storage Yard	Soil and groundwater samples collected.		

Table 3 – Site and Preliminary Screening Area Closeout Summary

Site/Preliminary Screening Area	Investigation Activity	Determination	Closeout Documentation
Military Munitions Response Program Sites			
Chemical Defense Area	Desktop evaluation.	No evidence of a CERCLA release or potential unacceptable risks were identified during the archive search. Additionally, significant redevelopment and fill of the area has occurred. Area removed from further study.	Final Preliminary Assessment, NAB Little Creek. September 2007.
1942 Pistol Range	Desktop evaluation.	No evidence of a CERCLA release or potential unacceptable risks. The site is currently under several feet of concrete that makes up the landing craft air cushion pad. Area removed from further study.	
Anti-Aircraft Target Rifle Range 1944 Pistol Range 1953 Pistol Range	Desktop evaluation and site visit.	Site screening area does not pose a threat or potential threat to public health, welfare, or the environment. Area removed from further study.	Final Site Screening Process Closeout Report, Anti-Aircraft Target Rifle Range, 1944 Pistol Range, and 1953 Pistol Range, NAB Little Creek, JEB Little Creek-Fort Story, Virginia Beach, Virginia. September 2010.
Depth Charge Testing Area	Desktop evaluation.	Site screening area does not pose a threat or potential threat to public health, welfare, or the environment. Area removed from further study.	Final Site Screening Process Closeout Report, Depth Charge Testing Area, NAB Little Creek, JEB Little Creek-Fort Story, Virginia Beach, Virginia. September 2010.
Former Morale, Welfare, and Recreation Skeet Range	Soil and groundwater samples collected.	Site screening area does not pose a threat or potential threat to public health, welfare, or the environment. Area removed from further study.	Final Site Screening Process Report, Former Morale, Welfare, and Recreation Skeet Range, NAB Little Creek, JEB Little Creek-Fort Story, Virginia Beach, Virginia. January 2011.

placed across the removal action area to address any residual contamination that may remain. Post-sand placement bathymetric survey was completed to ensure adequate sand placement. Because pre-removal action sampling defined the area requiring action to mitigate potential ecological risk at SWMU 7b and pre- and post dredge bathymetric surveys confirmed successful removal of all contaminated sediment, no post-dredge confirmation sampling was required. Successful removal of contaminated sediment and risk mitigation will be documented in an NTCRA construction summary memorandum, to be finalized prior to signature of the ROD.

The Navy, in partnership with USEPA and VDEQ, agreed the 2013 NTCRA mitigated all potentially unacceptable ecological risks attributable to SWMU 7b.

6 Preferred Alternative

Based on the results of the completed investigations, risk evaluations, and the NTCRA, the Navy believes there are no remaining unacceptable risks to human health or the environment at SWMU 7b. Furthermore, the removal of impacted sediment and site restoration has eliminated the potential for future contaminant transport. Because there are no unacceptable risks at SWMU 7b, no alternative other than the no further action alternative was evaluated. Under this alternative, no response action will be performed at SWMU 7b and no restrictions on land use or exposure are necessary. There is no cost to implement this alternative. The Navy expects the no further action alternative satisfies the statutory requirements of CERCLA. The Navy may reconsider no further action as the preferred alternative or select another alternative if public comments or additional data indicate that another alternative warrants consideration.

State Acceptance

State involvement has been solicited throughout the CERCLA and remedy selection process. VDEQ, as the designated state support agency, has reviewed this Proposed Plan and has provided concurrence on the preferred alternative.

Community Acceptance

A public meeting will be held on August 13, 2013 at 7:00 pm to present the Proposed Plan and answer community questions regarding the preferred alternative for SWMU 7b.

Figure 4 – SWMU 7b Proposed Removal Area

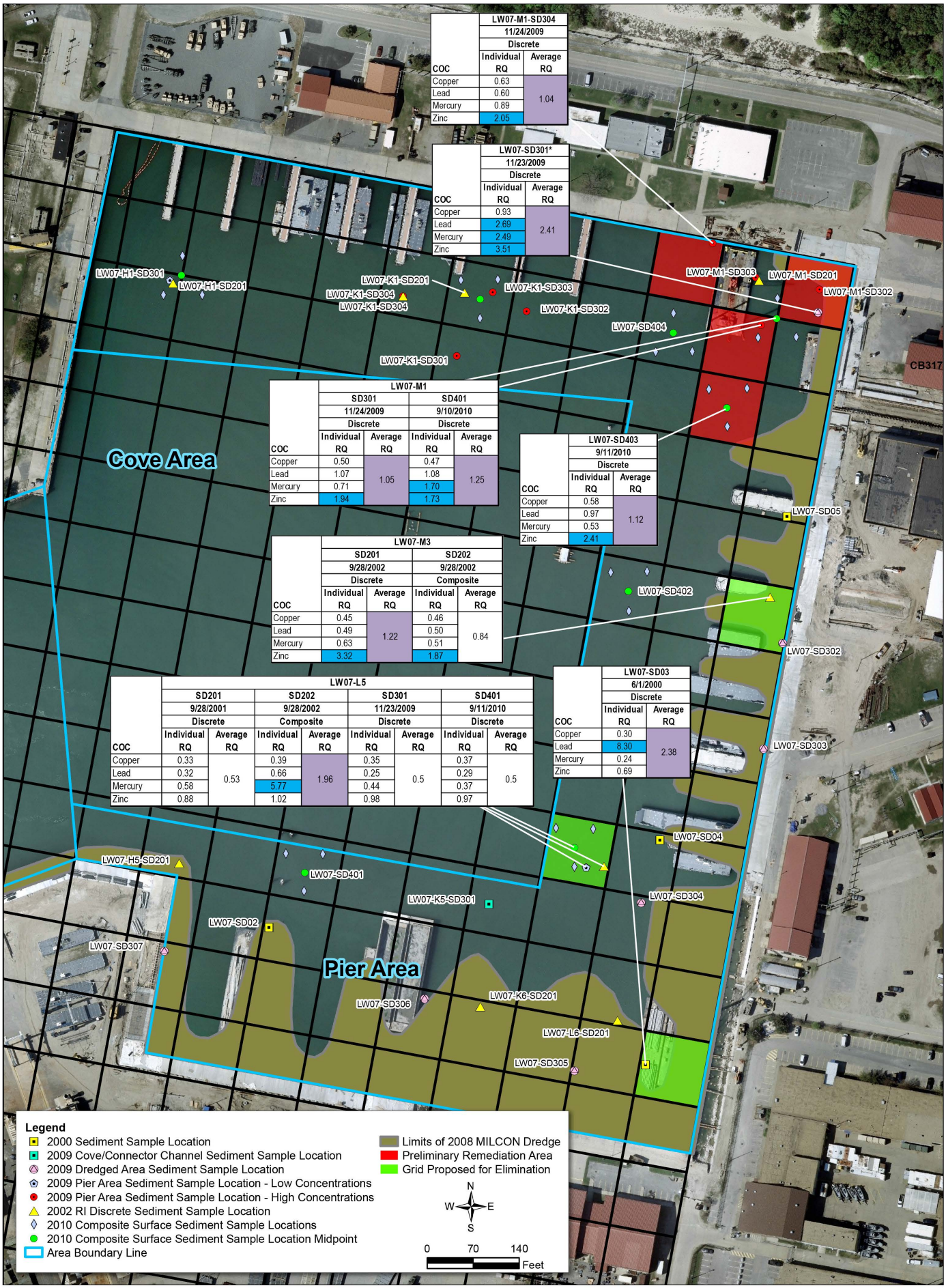
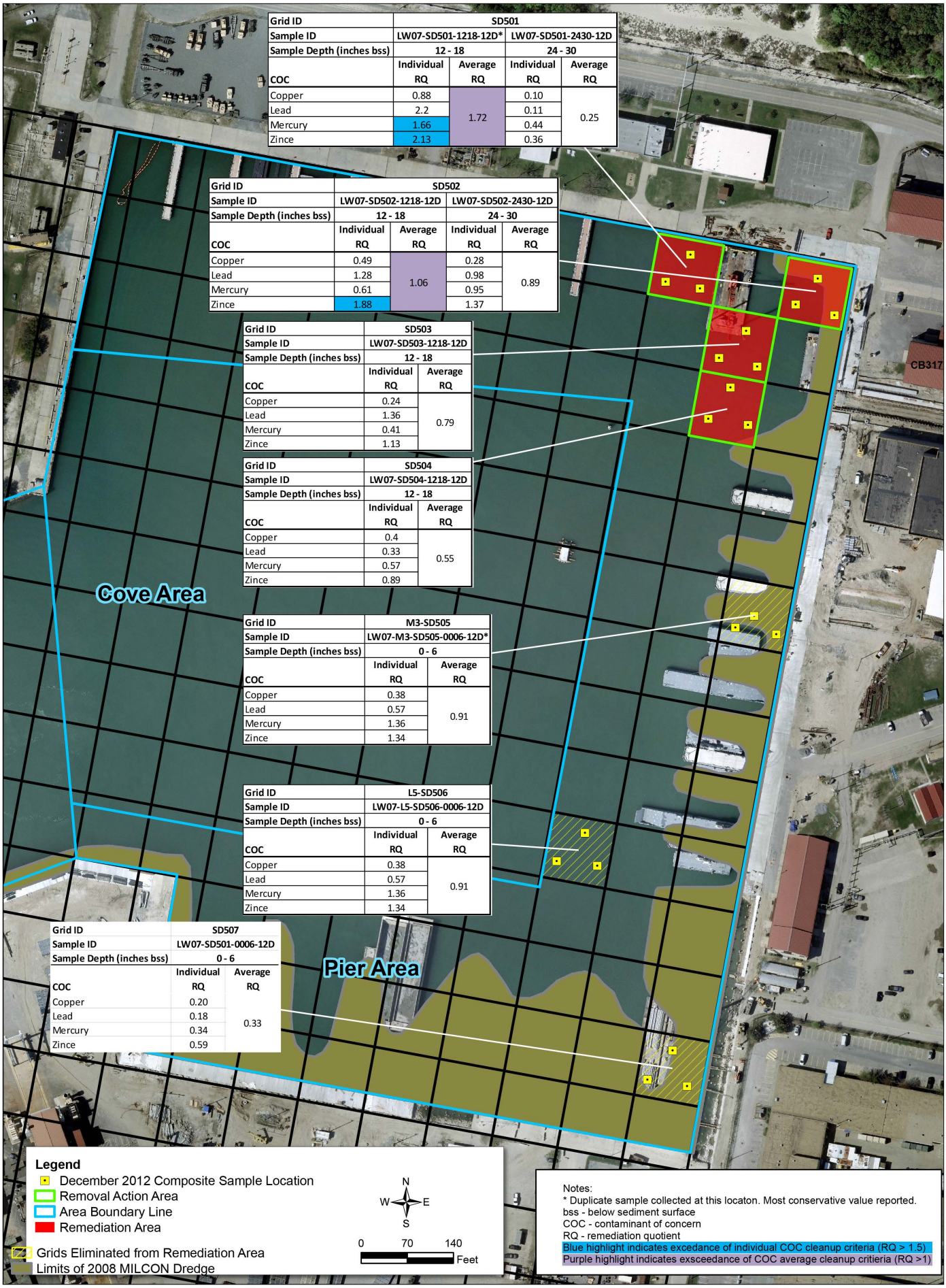


Figure 5 – Remediation Area Delineation and Removal Boundary



7 Community Participation

The Navy and USEPA provide information regarding the environmental cleanups at JEB Little Creek to the public through the **Restoration Advisory Board (RAB)**, public meetings, the AR file for the SWMU, and announcements published in The Virginian-Pilot newspaper. The public is encouraged to gain a more comprehensive understanding of SWMU 7b and the ERP at JEB Little Creek. The public comment period for this Proposed Plan runs from July 27, 2013, to September 12, 2013, and a public meeting will be held August 13, 2013, at 7:00 pm (see page 1 of this report for details). Minutes for the public meeting will be included in the AR file. The Navy will summarize and respond to all comments submitted during the public comment period in a responsiveness summary, which will become a part of the ROD, and will also be included in the AR file for JEB Little Creek.

During the comment period, interested parties may request additional information or submit written comments to the following individual:

Mr. Bryan Peed
NAVFAC MIDLANT, Code OPHE3
9742 Maryland Avenue
Building N-26, Room 3300
Norfolk, VA 23511-3095
Phone: (757) 341-0480
E-mail: Bryan.Peed@navy.mil

Additional information may also be obtained by contacting the following individuals:

Mr. Jeffery Boylan, Code 3HS11
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029
Phone: (215) 814-2094
E-mail: Boylan.Jeffrey@epamail.epa.gov

Mr. Paul Herman
Virginia Dept. of Environmental Quality
629 East Main Street
Richmond, VA 23219
Phone: (804) 698-4464
E-mail: paul.herman@deq.virginia.gov

Glossary

This glossary defines in non-technical language the more commonly used environmental terms appearing in this Proposed Plan. The definitions do not constitute the Navy's, USEPA's, or VDEQ's official use of terms and phrases for regulatory purposes, and nothing in this glossary should be construed to alter or supplant any other federal or Commonwealth document. Official terminology may be found in the laws and related regulations as published in such sources as the Congressional Record, Federal Register, and elsewhere.

Abrasive blast material (ABM): Material used under high pressure to smooth a rough surface, roughen a smooth surface, shape a surface, or remove surface contaminants. ABM can be manufactured using minerals, metals, agricultural material, or synthetic material.

Administrative Record (AR): A compilation of site-related information reviewed or relied upon by the Navy and regulatory agencies to make decisions about the site and its cleanup, which is available for public review.

Background: Constituents or locations that are not influenced by the releases from a site, and usually described as either naturally occurring or anthropogenic. Naturally occurring substances are substances present in the environment that have not be influenced by human activity. Anthropogenic substances are natural- and human-made substances present in the environment as a result of human activities (not specifically related to the CERCLA release in question).

Benthic Invertebrate: Organisms without a backbone living on the floor of a water body (i.e., clams and polycheate worms).

Bio-augmentation: the addition of necessary nutrients required to speed up the rate of degradation of a contaminant.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA): A federal law, commonly referred to as the "Superfund" Program, passed in 1980 and amended by the SARA of 1986. CERCLA provides for cleanup and emergency response in connection with existing inactive hazardous waste disposal sites that endanger public health and safety or the environment.

Conceptual site model: A description of a site and its environment that is based on existing knowledge and that assists in planning, interpreting data, and communicating. It describes sources of contamination (such as spills) and **receptors** (such as humans) and the interactions that link the two.

Contaminant of concern (COC): A contaminant which has been shown through analysis to be likely to cause risk to humans, plants or animals at a site.

Contaminant of potential concern (COPC): A contaminant present in site media (soil, groundwater, surface water, or sediment) at a concentration that exceeds risk screening criteria but has not yet been determined to pose risk; further evaluation is completed to evaluate site-specific risk in quantitative risk assessment.

Ecological: Refers to plants and animals in the environment.

Ecological Risk Assessment (ERA): An evaluation of the risk posed to the environment if remedial activities are not performed at the site.

Effects Range-Medium (ER-M) screening values: A sediment quality guideline representative of concentrations above which toxilogical effects in marine ecological environments are generally observed or predicted.

Engineering Evaluation and Cost Analysis (EE/CA): area report written for removal actions where a planning period of at least six months exists before on-site activities must be initiated. It identifies the objectives of the removal action and analyzes the effectiveness, implementability, and cost of various alternatives that may satisfy these objectives

Enhanced anaerobic bioremediation: Practice of adding hydrogen to groundwater and/or soil to increase the number and vitality of anaerobic (does not require oxygen for growth) microorganisms working to breakdown contaminants in groundwater and/or soil.

Enhanced reductive dechlorination (ERD): An anaerobic (i.e., without oxygen) process in which an electron donor source is injected into the subsurface to allow chlorine atoms on a parent chlorinated VOC molecule to be sequentially replaced with hydrogen in order to break down COCs.

Environmental Restoration Program (ERP): The Navy, as the lead agency, acts in partnership with USEPA Region 3 and VDEQ to address environmental investigations at the facility through the ERP. The current ERP is consistent with CERCLA and applicable state environmental laws.

Groundwater: Subsurface water that occurs in soil and geologic formations that are fully saturated.

Human Health Risk Assessment (HHRA): An evaluation of the risk posed to human health if remedial activities are not implemented.

Land use controls (LUCs): Physical, legal, or administrative methods that restrict the use of or limit access to property to reduce risks to human health and the environment.

Lower-trophic-level aquatic receptors: Animals or plants that are at the lower end of the food chain and are consumed by upper-trophic-level receptors. Lower-trophic level receptors may be exposed to contaminants related to aquatic media (surface water and sediment) at a given site through direct exposure or bio-uptake.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): Provides the organizational structure and procedures needed to prepare for and respond to discharges of oil and releases of hazardous substances, pollutants, and contaminants.

National Priorities List (NPL): A list developed by the USEPA of uncontrolled hazardous substance release sites in the United States that are considered priorities for long-term remedial evaluation and response.

Naval Facilities Engineering Command (NAVFAC): Global organization that provides planning, design, and construction of shore facilities for Navy activities around the world.

No Further Action: A determination that site characterization is complete and that, if applicable, removal and/or remedial actions have achieved their objectives, and that no additional investigation or action is required for a site.

Non time-critical removal action (NTCRA): A removal action conducted at a Superfund site where a planning period of at least 6 months exists before on-site activities must be initiated.

Polycyclic aromatic hydrocarbon (PAH): Any of a class of carcinogenic organic molecules that consist of three or more benzene rings that are commonly produced by fossil fuel combustion.

Polychlorinated biphenyl (PCB): A type of industrial compound, such as lubricants, heat-transfer fluids, and plasticizers, that accumulates in animal tissue and results in adverse health conditions. PCBs are especially deadly to fish and invertebrates, and stay in the food chain for many years. The manufacture and use of PCBs has been regulated since the 1970s because they are very harmful to the environment.

Proposed Plan: A document that presents and requests public input regarding a proposed cleanup alternative.

Public comment period: The time allowed for the members of an affected community to express views and concerns regarding an action proposed to be taken by the Navy and USEPA, such as a rulemaking, permit, or Superfund-remedy selection.

Receptors: Humans, animals, or plants that may be exposed to risks from contaminants related to a given site.

Record of Decision (ROD): A legal document that describes the cleanup action or remedy selected for a site, the basis for choosing that remedy, and public comment on alternative remedies.

Remedial action objectives: Cleanup objectives for a site that are developed based on contaminated media, COCs, potential receptors and exposure scenarios, HHRA and ERA, and attainment of regulatory cleanup levels, if any exist.

Remedial action: Those actions consistent with permanent remedy taken instead of, or in addition to, removal action in the event of a release or threatened release of a hazardous substance into the environment.

Remedial Investigation (RI): A study that supports the selection of a remedy where hazardous substances have been disposed of or released. The RI identifies the nature and extent of contamination at the facility.

Remedial Investigation/Human Health Risk Assessment/ Ecological Risk Assessment (RI/HHRA/ERA): See "Remedial Investigation," "Human Health Risk Assessment," and "Ecological Risk Assessment."

Restoration Advisory Board (RAB): An advisory group for the restoration process with members from the public, the Navy, and the regulatory agencies. The purpose of the RAB is to gain effective input from stakeholders on cleanup activities and increase installation responsiveness to the community's environmental restoration concerns.

Sediment: Particulate matter that can be transported by fluid flow and that is found submerged underwater in surface water systems.

Site: The area where a hazardous substance, hazardous waste, hazardous constituent, pollutant, or contaminant from the facility has been deposited, stored, disposed of, or placed; has migrated; or otherwise come to be located.

Site Management Plan (SMP): An annual report that provides a management tool for NAVFAC, VDEQ, USEPA, and consultants for use in planning, scheduling, and setting priorities for environmental remedial response activities to be conducted at a base. The SMP establishes schedules and conceptual approaches for continued CERCLA activities.

Soil: A mixture of organic and inorganic solids, air, water, and biota that exists on the earth surface above bedrock, including materials of anthropogenic sources, such as slag and sludge.

Solid Waste Management Unit (SWMU): Any discernible unit in which wastes have been placed at any time, regardless of whether the unit was designed to accept solid waste or hazardous waste, and from which contaminants may migrate. Units include, but are not limited to, old landfills, wastewater treatment tanks, container storage areas, surface impoundments, waste piles, land treatment units, incinerators, injection wells, recycling operations, leaking process or waste collection sewers, and transfer stations. SWMUs include any area at a facility at which solid wastes have been routinely and systematically released. Only past releases from SWMUs that also meet the definition of a CERCLA release are eligible for remediation through the ERP.

Surface water: All water naturally opens to the atmosphere (for example, rivers, lakes, reservoirs, ponds, streams, impoundments, seas, and estuaries).

United States Environmental Protection Agency (USEPA): The federal agency responsible for administration and enforcement of CERCLA (and other environmental statutes and regulations), and with final approval authority for the Selected Remedy.

Upper-trophic-level aquatic receptors: Humans or animals that are at the upper end of the food chain and consume lower-trophic-level receptors. Upper-trophic level receptors may be exposed to contaminants related to aquatic media (surface water and sediment) at a given site through direct exposure or via the food web.

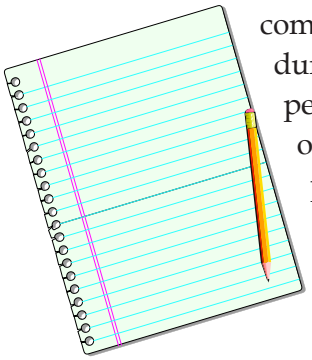
Virginia Department of Environmental Quality (VDEQ): The Commonwealth agency responsible for administration and enforcement of environmental regulations.

Please print or type your comments below.

Mark Your Calendar for the Public Comment Period

Public Comment Period

July 27 – September 12, 2013

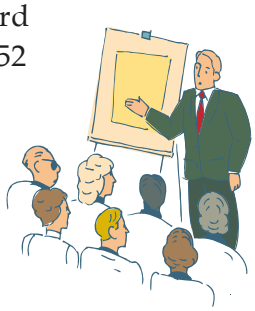


The Navy will accept written comments on this Proposed Plan during the public comment period. To submit comments or obtain further information, please refer to the names and contact information included at the end of Section 7. A blank sheet has been added at the end of the document to be used for writing comments.

Attend the Public Meeting

August 13, 2013
7:00 — 7:30 pm

Virginia Beach Central Library
Libris Conference Room
4100 Virginia Beach Boulevard
Virginia Beach, Virginia 23452



The Navy will hold a public meeting to explain the Proposed Plan. Verbal and written comments will be accepted at this meeting.

Location of Administrative Record File:

NAVFAC Atlantic
6506 Hampton Boulevard, Norfolk, VA 23508
Phone: 757.322.4785

FOLD HERE

Place stamp here

Mr. Bryan Peed
NAVFAC MIDLANT, Code OPHE3
9742 Maryland Avenue
Building N-26, Room 3300
Norfolk, VA 23511-3095